



## SEQUENCE LISTING

<110> Jensenius, Jens Chr.  
Thiel, Steffen

<120> MASP-2 COMPLEMENT-FIXING ENZYME, AND  
USES FOR IT

<130> 09011-002003

<140> 09/874,238

<141> 2001-06-04

<150> 09/054,218

<151> 1998-04-02

<150> 60/042,678

<151> 1997-04-03

<160> 8

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 41

<212> PRT

<213> Homo sapiens

<400> 1

Thr	Pro	Leu	Gly	Pro	Lys	Trp	Pro	Glu	Pro	Val	Phe	Gly	Arg	Leu	Ala
1				5				10						15	
Ser	Pro	Gly	Phe	Pro	Gly	Glu	Tyr	Ala	Asn	Asp	Gln	Glu	Arg	Arg	Trp
			20					25					30		
Thr	Leu	Thr	Ala	Pro	Pro	Gly	Tyr	Arg							
				35				40							

<210> 2

<211> 686

<212> PRT

<213> Homo sapiens

<400> 2

Met	Arg	Leu	Leu	Thr	Leu	Leu	Gly	Leu	Leu	Cys	Gly	Ser	Val	Ala	Thr
1				5				10						15	
Pro	Leu	Gly	Pro	Lys	Trp	Pro	Glu	Pro	Val	Phe	Gly	Arg	Leu	Ala	Ser
			20					25					30		
Pro	Gly	Phe	Pro	Gly	Glu	Tyr	Ala	Asn	Asp	Gln	Glu	Arg	Arg	Trp	Thr
		35					40					45			
Leu	Thr	Ala	Pro	Pro	Gly	Tyr	Arg	Leu	Arg	Leu	Tyr	Phe	Thr	His	Phe
	50					55					60				
Asp	Leu	Glu	Leu	Ser	His	Leu	Cys	Glu	Tyr	Asp	Phe	Val	Lys	Leu	Ser
65					70					75				80	
Ser	Gly	Ala	Lys	Val	Leu	Ala	Thr	Leu	Cys	Gly	Gln	Glu	Ser	Thr	Asp
			85					90						95	
Thr	Glu	Arg	Ala	Pro	Gly	Lys	Asp	Thr	Phe	Tyr	Ser	Leu	Gly	Ser	Ser
			100					105					110		

Leu Asp Ile Thr Phe Arg Ser Asp Tyr Ser Asn Glu Lys Pro Phe Thr  
 115 120 125  
 Gly Phe Glu Ala Phe Tyr Ala Ala Glu Asp Ile Asp Glu Cys Gln Val  
 130 135 140  
 Ala Pro Gly Glu Ala Pro Thr Cys Asp His His Cys His Asn His Leu  
 145 150 155 160  
 Gly Gly Phe Tyr Cys Ser Cys Arg Ala Gly Tyr Val Leu His Arg Asn  
 165 170 175  
 Lys Arg Thr Cys Ser Ala Leu Cys Ser Gly Gln Val Phe Thr Gln Arg  
 180 185 190  
 Ser Gly Glu Leu Ser Ser Pro Glu Tyr Pro Arg Pro Tyr Pro Lys Leu  
 195 200 205  
 Ser Ser Cys Thr Tyr Ser Ile Ser Leu Glu Glu Gly Phe Ser Val Ile  
 210 215 220  
 Leu Asp Phe Val Glu Ser Phe Asp Val Glu Thr His Pro Glu Thr Leu  
 225 230 235 240  
 Cys Pro Tyr Asp Phe Leu Lys Ile Gln Thr Asp Arg Glu Glu His Gly  
 245 250 255  
 Pro Phe Cys Gly Lys Thr Leu Pro His Arg Ile Glu Thr Lys Ser Asn  
 260 265 270  
 Thr Val Thr Ile Thr Phe Val Thr Asp Glu Ser Gly Asp His Thr Gly  
 275 280 285  
 Trp Lys Ile His Tyr Thr Ser Thr Ala Gln Pro Cys Pro Tyr Pro Met  
 290 295 300  
 Ala Pro Pro Asn Gly His Val Ser Pro Val Gln Ala Lys Tyr Ile Leu  
 305 310 315 320  
 Lys Asp Ser Phe Ser Ile Phe Cys Glu Thr Gly Tyr Glu Leu Leu Gln  
 325 330 335  
 Gly His Leu Pro Leu Lys Ser Phe Thr Ala Val Cys Gln Lys Asp Gly  
 340 345 350  
 Ser Trp Asp Arg Pro Met Pro Ala Cys Ser Ile Val Asp Cys Gly Pro  
 355 360 365  
 Pro Asp Asp Leu Pro Ser Gly Arg Val Glu Tyr Ile Thr Gly Pro Gly  
 370 375 380  
 Val Thr Thr Tyr Lys Ala Val Ile Gln Tyr Ser Cys Glu Glu Thr Phe  
 385 390 395 400  
 Tyr Thr Met Lys Val Asn Asp Gly Lys Tyr Val Cys Glu Ala Asp Gly  
 405 410 415  
 Phe Trp Thr Ser Ser Lys Gly Glu Lys Ser Leu Pro Val Cys Glu Pro  
 420 425 430  
 Val Cys Gly Leu Ser Ala Arg Thr Thr Gly Gly Arg Ile Tyr Gly Gly  
 435 440 445  
 Gln Lys Ala Lys Pro Gly Asp Phe Pro Trp Gln Val Leu Ile Leu Gly  
 450 455 460  
 Gly Thr Thr Ala Ala Gly Ala Leu Leu Tyr Asp Asn Trp Val Leu Thr  
 465 470 475 480  
 Ala Ala His Ala Val Tyr Glu Gln Lys His Asp Ala Ser Ala Leu Asp  
 485 490 495  
 Ile Arg Met Gly Thr Leu Lys Arg Leu Ser Pro His Tyr Thr Gln Ala  
 500 505 510  
 Trp Ser Glu Ala Val Phe Ile His Glu Gly Tyr Thr His Asp Ala Gly  
 515 520 525  
 Phe Asp Asn Asp Ile Ala Leu Ile Lys Leu Asn Asn Lys Val Val Ile  
 530 535 540  
 Asn Ser Asn Ile Thr Pro Ile Cys Leu Pro Arg Lys Glu Ala Glu Ser  
 545 550 555 560  
 Phe Met Arg Thr Asp Asp Ile Gly Thr Ala Ser Gly Trp Gly Leu Thr

				565					570					575			
Gln	Arg	Gly	Phe	Leu	Ala	Arg	Asn	Leu	Met	Tyr	Val	Asp	Ile	Pro	Ile		
			580					585					590				
Val	Asp	His	Gln	Lys	Cys	Thr	Ala	Ala	Tyr	Glu	Lys	Pro	Pro	Tyr	Pro		
		595					600					605					
Arg	Gly	Ser	Val	Thr	Ala	Asn	Met	Leu	Cys	Ala	Gly	Leu	Glu	Ser	Gly		
	610					615					620						
Gly	Lys	Asp	Ser	Cys	Arg	Gly	Asp	Ser	Gly	Gly	Ala	Leu	Val	Phe	Leu		
625				630					635					640			
Asp	Ser	Glu	Thr	Glu	Arg	Trp	Phe	Val	Gly	Gly	Ile	Val	Ser	Trp	Gly		
			645					650					655				
Ser	Met	Asn	Cys	Gly	Glu	Ala	Gly	Gln	Tyr	Gly	Val	Tyr	Thr	Lys	Val		
		660					665					670					
Ile	Asn	Tyr	Ile	Pro	Trp	Ile	Glu	Asn	Ile	Ile	Ser	Asp	Phe				
	675					680					685						

&lt;210&gt; 3

&lt;211&gt; 2475

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (37)...(2094)

&lt;400&gt; 3

ctcgtgcaat tcggcaccgag gctggacggg cacacc atg agg ctg ctg acc ctc	54
Met Arg Leu Leu Thr Leu	
1 5	
ctg ggc ctt ctg tgt ggc tcg gtg gcc acc ccc tta ggc ccg aag tgg	102
Leu Gly Leu Leu Cys Gly Ser Val Ala Thr Pro Leu Gly Pro Lys Trp	
10 15 20	
cct gaa cct gtg ttc ggg cgc ctg gca tcc ccc ggc ttt cca ggg gag	150
Pro Glu Pro Val Phe Gly Arg Leu Ala Ser Pro Gly Phe Pro Gly Glu	
25 30 35	
tat gcc aat gac cag gag cgg cgc tgg acc ctg act gca ccc ccc ggc	198
Tyr Ala Asn Asp Gln Glu Arg Arg Trp Thr Leu Thr Ala Pro Pro Gly	
40 45 50	
tac cgc ctg cgc ctc tac ttc acc cac ttc gac ctg gag ctc tcc cac	246
Tyr Arg Leu Arg Leu Tyr Phe Thr His Phe Asp Leu Glu Leu Ser His	
55 60 65 70	
ctc tgc gag tac gac ttc gtc aag ctg agc tcg ggg gcc aag gtg ctg	294
Leu Cys Glu Tyr Asp Phe Val Lys Leu Ser Ser Gly Ala Lys Val Leu	
75 80 85	
gcc acg ctg tgc ggg cag gag agc aca gac acg gag cgg gcc cct ggc	342
Ala Thr Leu Cys Gly Gln Glu Ser Thr Asp Thr Glu Arg Ala Pro Gly	
90 95 100	
aag gac act ttc tac tcg ctg ggc tcc agc ctg gac att acc ttc cgc	390
Lys Asp Thr Phe Tyr Ser Leu Gly Ser Ser Leu Asp Ile Thr Phe Arg	
105 110 115	

tcc gac tac tcc aac gag aag ccg ttc acg ggg ttc gag gcc ttc tat Ser Asp Tyr Ser Asn Glu Lys Pro Phe Thr Gly Phe Glu Ala Phe Tyr 120 125 130	438
gca gcc gag gac att gac gag tgc cag gtg gcc ccg gga gag gcg ccc Ala Ala Glu Asp Ile Asp Glu Cys Gln Val Ala Pro Gly Glu Ala Pro 135 140 145 150	486
acc tgc gac cac cac tgc cac aac cac ctg ggc ggt ttc tac tgc tcc Thr Cys Asp His His Cys His Asn His Leu Gly Gly Phe Tyr Cys Ser 155 160 165	534
tgc cgc gca ggc tac gtc ctg cac cgt aac aag cgc acc tgc tca gcc Cys Arg Ala Gly Tyr Val Leu His Arg Asn Lys Arg Thr Cys Ser Ala 170 175 180	582
ctg tgc tcc ggc cag gtc ttc acc cag agg tct ggg gag ctc agc agc Leu Cys Ser Gly Gln Val Phe Thr Gln Arg Ser Gly Glu Leu Ser Ser 185 190 195	630
cct gaa tac cca cgg ccg tat ccc aaa ctc tcc agt tgc act tac agc Pro Glu Tyr Pro Arg Pro Tyr Pro Lys Leu Ser Ser Cys Thr Tyr Ser 200 205 210	678
atc agc ctg gag gag ggg ttc agt gtc att ctg gac ttt gtg gag tcc Ile Ser Leu Glu Glu Gly Phe Ser Val Ile Leu Asp Phe Val Glu Ser 215 220 225 230	726
ttc gat gtg gag aca cac cct gaa acc ctg tgt ccc tac gac ttt ctc Phe Asp Val Glu Thr His Pro Glu Thr Leu Cys Pro Tyr Asp Phe Leu 235 240 245	774
aag att caa aca gac aga gaa gaa cat ggc cca ttc tgt ggg aag aca Lys Ile Gln Thr Asp Arg Glu Glu His Gly Pro Phe Cys Gly Lys Thr 250 255 260	822
ttg ccc cac agg att gaa aca aaa agc aac acg gtg acc atc acc ttt Leu Pro His Arg Ile Glu Thr Lys Ser Asn Thr Val Thr Ile Thr Phe 265 270 275	870
gtc aca gat gaa tca gga gac cac aca ggc tgg aag atc cac tac acg Val Thr Asp Glu Ser Gly Asp His Thr Gly Trp Lys Ile His Tyr Thr 280 285 290	918
agc aca gcg cag cct tgc cct tat ccg atg gcg cca cct aat ggc cac Ser Thr Ala Gln Pro Cys Pro Tyr Pro Met Ala Pro Pro Asn Gly His 295 300 305 310	966
gtt tca cct gtg caa gcc aaa tac atc ctg aaa gac agc ttc tcc atc Val Ser Pro Val Gln Ala Lys Tyr Ile Leu Lys Asp Ser Phe Ser Ile 315 320 325	1014
ttt tgc gag act ggc tat gag ctt ctg caa ggt cac ttg ccc ctg aaa Phe Cys Glu Thr Gly Tyr Glu Leu Leu Gln Gly His Leu Pro Leu Lys 330 335 340	1062

tcc ttt act gca gtt tgt cag aaa gat gga tct tgg gac cgg cca atg	1110
Ser Phe Thr Ala Val Cys Gln Lys Asp Gly Ser Trp Asp Arg Pro Met	
345 350 355	
ccc gcg tgc agc att gtt gac tgt ggc cct cct gat gat cta ccc agt	1158
Pro Ala Cys Ser Ile Val Asp Cys Gly Pro Pro Asp Asp Leu Pro Ser	
360 365 370	
ggc cga gtg gag tac atc aca ggt cct gga gtg acc acc tac aaa gct	1206
Gly Arg Val Glu Tyr Ile Thr Gly Pro Gly Val Thr Thr Tyr Lys Ala	
375 380 385 390	
gtg att cag tac agc tgt gaa gag acc ttc tac aca atg aaa gtg aat	1254
Val Ile Gln Tyr Ser Cys Glu Glu Thr Phe Tyr Thr Met Lys Val Asn	
395 400 405	
gat ggt aaa tat gtg tgt gag gct gat gga ttc tgg acg agc tcc aaa	1302
Asp Gly Lys Tyr Val Cys Glu Ala Asp Gly Phe Trp Thr Ser Ser Lys	
410 415 420	
gga gaa aaa tca ctc cca gtc tgt gag cct gtt tgt gga cta tca gcc	1350
Gly Glu Lys Ser Leu Pro Val Cys Glu Pro Val Cys Gly Leu Ser Ala	
425 430 435	
cgc aca aca gga ggg cgt ata tat gga ggg caa aag gca aaa cct ggt	1398
Arg Thr Thr Gly Gly Arg Ile Tyr Gly Gly Gln Lys Ala Lys Pro Gly	
440 445 450	
gat ttt cct tgg caa gtc ctg ata tta ggt gga acc aca gca gca ggt	1446
Asp Phe Pro Trp Gln Val Leu Ile Leu Gly Gly Thr Thr Ala Ala Gly	
455 460 465 470	
gca ctt tta tat gac aac tgg gtc cta aca gct gct cat gcc gtc tat	1494
Ala Leu Leu Tyr Asp Asn Trp Val Leu Thr Ala Ala His Ala Val Tyr	
475 480 485	
gag caa aaa cat gat gca tcc gcc ctg gac att cga atg ggc acc ctg	1542
Glu Gln Lys His Asp Ala Ser Ala Leu Asp Ile Arg Met Gly Thr Leu	
490 495 500	
aaa aga cta tca cct cat tat aca caa gcc tgg tct gaa gct gtt ttt	1590
Lys Arg Leu Ser Pro His Tyr Thr Gln Ala Trp Ser Glu Ala Val Phe	
505 510 515	
ata cat gaa ggt tat act cat gat gct ggc ttt gac aat gac ata gca	1638
Ile His Glu Gly Tyr Thr His Asp Ala Gly Phe Asp Asn Asp Ile Ala	
520 525 530	
ctg att aaa ttg aat aac aaa gtt gta atc aat agc aac atc acg cct	1686
Leu Ile Lys Leu Asn Asn Lys Val Val Ile Asn Ser Asn Ile Thr Pro	
535 540 545 550	
att tgt ctg cca aga aaa gaa gct gaa tcc ttt atg agg aca gat gac	1734
Ile Cys Leu Pro Arg Lys Glu Ala Glu Ser Phe Met Arg Thr Asp Asp	
555 560 565	
att gga act gca tct gga tgg gga tta acc caa agg ggt ttt ctt gct	1782

Ile Gly Thr Ala Ser Gly Trp Gly Leu Thr Gln Arg Gly Phe Leu Ala	
570 575 580	
aga aat cta atg tat gtc gac ata ccg att gtt gac cat caa aaa tgt	1830
Arg Asn Leu Met Tyr Val Asp Ile Pro Ile Val Asp His Gln Lys Cys	
585 590 595	
act gct gca tat gaa aag cca ccc tat cca agg gga agt gta act gct	1878
Thr Ala Ala Tyr Glu Lys Pro Pro Tyr Pro Arg Gly Ser Val Thr Ala	
600 605 610	
aac atg ctt tgt gct ggc tta gaa agt ggg ggc aag gac agc tgc aga	1926
Asn Met Leu Cys Ala Gly Leu Glu Ser Gly Gly Lys Asp Ser Cys Arg	
615 620 625 630	
ggg gac agc gga ggg gca ctg gtg ttt cta gat agt gaa aca gag agg	1974
Gly Asp Ser Gly Gly Ala Leu Val Phe Leu Asp Ser Glu Thr Glu Arg	
635 640 645	
tgg ttt gtg gga gga ata gtg tcc tgg ggt tcc atg aat tgt ggg gaa	2022
Trp Phe Val Gly Gly Ile Val Ser Trp Gly Ser Met Asn Cys Gly Glu	
650 655 660	
gca ggt cag tat gga gtc tac aca aaa gtt att aac tat att ccc tgg	2070
Ala Gly Gln Tyr Gly Val Tyr Thr Lys Val Ile Asn Tyr Ile Pro Trp	
665 670 675	
atc gag aac ata att agt gat ttt taacttgctg gtctgcagtc aaggattctt	2124
Ile Glu Asn Ile Ile Ser Asp Phe	
680 685	
cattttttaga aatgcctgtg aagaccttgg cagcgacgtg gctcgagaag cattcatcat	2184
tactgtggac atggcagttg ttgctccacc caaaaaaaca gactccaggt gaggtgctg	2244
tcattttctcc acttgccagt ttaattccag ccttaccat tgactcaagg ggacataaac	2304
cacgagagtg acagtcattt ttgcccaccc agtgtaattg cactgctcaa attacatttc	2364
attaccttaa aaagccagtc tcttttcata ctggctgttg gcattttctgt aaactgctg	2424
tccatgctct ttgtttttta acttggttctt attgaaaaaa aaaaaaaaaa a	2475
<210> 4	
<211> 8	
<212> PRT	
<213> Homo sapiens	
<400> 4	
Glu Tyr Ala Asn Asp Gln Glu Arg	
1 5	
<210> 5	
<211> 8	
<212> PRT	
<213> Homo sapiens	
<400> 5	
Lys Pro Phe Thr Gly Phe Glu Ala	
1 5	
<210> 6	

<211> 679  
 <212> PRT  
 <213> Homo sapiens

<400> 6

His	Thr	Val	Glu	Leu	Asn	Asn	Met	Phe	Gly	Gln	Ile	Gln	Ser	Pro	Gly	1	5	10	15
Tyr	Pro	Asp	Ser	Tyr	Pro	Ser	Asp	Ser	Glu	Val	Thr	Trp	Asn	Ile	Thr	20	25	30	
Val	Pro	Asp	Gly	Phe	Arg	Ile	Lys	Leu	Tyr	Phe	Met	His	Phe	Asn	Leu	35	40	45	
Glu	Ser	Ser	Tyr	Leu	Cys	Glu	Tyr	Asp	Tyr	Val	Lys	Val	Glu	Thr	Glu	50	55	60	
Asp	Gln	Val	Leu	Ala	Thr	Phe	Cys	Gly	Arg	Glu	Thr	Thr	Asp	Thr	Glu	65	70	75	80
Gln	Thr	Pro	Gly	Gln	Glu	Val	Val	Leu	Ser	Pro	Gly	Ser	Phe	Met	Ser	85	90	95	
Ile	Thr	Phe	Arg	Ser	Asp	Phe	Ser	Asn	Glu	Glu	Arg	Phe	Thr	Gly	Phe	100	105	110	
Asp	Ala	His	Tyr	Met	Ala	Val	Asp	Val	Asp	Glu	Cys	Lys	Glu	Arg	Glu	115	120	125	
Asp	Glu	Glu	Leu	Ser	Cys	Asp	His	Tyr	Cys	His	Asn	Tyr	Ile	Gly	Gly	130	135	140	
Tyr	Tyr	Cys	Ser	Cys	Arg	Phe	Gly	Tyr	Ile	Leu	His	Thr	Asp	Asn	Arg	145	150	155	160
Thr	Cys	Arg	Val	Glu	Cys	Ser	Asp	Asn	Leu	Phe	Thr	Gln	Arg	Thr	Gly	165	170	175	
Val	Ile	Thr	Ser	Pro	Asp	Phe	Pro	Asn	Pro	Tyr	Pro	Lys	Ser	Ser	Glu	180	185	190	
Cys	Leu	Tyr	Thr	Ile	Glu	Leu	Glu	Gly	Phe	Met	Val	Asn	Leu	Gln	195	200	205		
Phe	Glu	Asp	Ile	Phe	Asp	Ile	Glu	Asp	His	Pro	Glu	Val	Pro	Cys	Pro	210	215	220	
Tyr	Asp	Tyr	Ile	Lys	Ile	Lys	Val	Gly	Pro	Lys	Val	Leu	Gly	Pro	Phe	225	230	235	240
Cys	Gly	Glu	Lys	Ala	Pro	Glu	Pro	Ile	Ser	Thr	Gln	Ser	His	Ser	Val	245	250	255	
Leu	Ile	Leu	Phe	His	Ser	Asp	Asn	Ser	Gly	Glu	Asn	Arg	Gly	Trp	Arg	260	265	270	
Leu	Ser	Tyr	Arg	Ala	Ala	Gly	Asn	Glu	Pro	Glu	Leu	Gln	Pro	Pro	Val	275	280	285	
His	Gly	Lys	Ile	Glu	Pro	Ser	Gln	Ala	Lys	Tyr	Phe	Phe	Lys	Asp	Gln	290	295	300	
Val	Leu	Val	Ser	Cys	Asp	Thr	Gly	Tyr	Lys	Val	Leu	Lys	Asp	Asn	Val	305	310	315	320
Glu	Met	Asp	Thr	Phe	Gln	Ile	Glu	Cys	Leu	Lys	Asp	Gly	Thr	Trp	Ser	325	330	335	
Asn	Lys	Ile	Pro	Thr	Cys	Lys	Ile	Val	Asp	Cys	Arg	Ala	Pro	Gly	Glu	340	345	350	
Leu	Glu	His	Gly	Leu	Ile	Thr	Phe	Ser	Thr	Arg	Asn	Asn	Leu	Thr	Thr	355	360	365	
Tyr	Lys	Ser	Glu	Ile	Lys	Tyr	Ser	Cys	Gln	Glu	Pro	Tyr	Tyr	Lys	Met	370	375	380	
Leu	Asn	Asn	Asn	Thr	Gly	Ile	Tyr	Thr	Cys	Ser	Ala	Gln	Gly	Val	Trp	385	390	395	400
Met	Asn	Lys	Val	Leu	Gly	Arg	Ser	Leu	Pro	Thr	Cys	Leu	Pro	Val	Cys	405	410	415	

Gly Leu Pro Lys Phe Ser Arg Lys Leu Met Ala Arg Ile Phe Asn Gly  
                   420                                  425                                  430  
 Arg Pro Ala Gln Lys Gly Thr Thr Pro Trp Ile Ala Met Leu Ser His  
                   435                                  440                                  445  
 Leu Asn Gly Gln Pro Phe Cys Gly Gly Ser Leu Leu Gly Ser Ser Trp  
                   450                                  455                                  460  
 Ile Val Thr Ala Ala His Cys Leu His Gln Ser Leu Asp Pro Lys Asp  
 465                                  470                                  475                                  480  
 Pro Thr Leu Arg Asp Ser Asp Leu Leu Ser Pro Ser Asp Phe Lys Ile  
                   485                                  490                                  495  
 Ile Leu Gly Lys His Trp Arg Leu Arg Ser Asp Glu Asn Glu Gln His  
                   500                                  505                                  510  
 Leu Gly Val Lys His Thr Thr Leu His Pro Lys Tyr Asp Pro Asn Thr  
                   515                                  520                                  525  
 Phe Glu Asn Asp Val Ala Leu Val Glu Leu Leu Glu Ser Pro Val Leu  
                   530                                  535                                  540  
 Asn Ala Phe Val Met Pro Ile Cys Leu Pro Glu Gly Pro Gln Gln Glu  
 545                                  550                                  555                                  560  
 Gly Ala Met Val Ile Val Ser Gly Trp Gly Lys Gln Phe Leu Gln Arg  
                   565                                  570                                  575  
 Phe Pro Glu Thr Leu Met Glu Ile Glu Ile Pro Ile Val Asp His Ser  
                   580                                  585                                  590  
 Thr Cys Gln Lys Ala Tyr Ala Pro Leu Lys Lys Lys Val Thr Arg Asp  
                   595                                  600                                  605  
 Met Ile Cys Ala Gly Glu Lys Glu Gly Gly Lys Asp Ala Cys Ser Gly  
                   610                                  615                                  620  
 Asp Ser Gly Gly Pro Met Val Thr Leu Asn Arg Glu Arg Gly Gln Trp  
 625                                  630                                  635                                  640  
 Tyr Leu Val Gly Thr Val Ser Trp Gly Asp Asp Cys Gly Lys Lys Asp  
                   645                                  650                                  655  
 Arg Tyr Gly Val Tyr Ser Tyr Ile His Asn Lys Asp Trp Ile Gln  
                   660                                  665                                  670  
 Arg Val Thr Gly Val Arg Asn  
                   675

<210> 7

<211> 688

<212> PRT

<213> Homo sapiens

<400> 7

Ser Ile Pro Ile Pro Gln Lys Leu Phe Gly Glu Val Thr Ser Pro Leu  
 1                                  5                                  10                                  15  
 Phe Pro Lys Pro Tyr Pro Asn Asn Phe Glu Thr Thr Thr Val Ile Thr  
                   20                                  25                                  30  
 Val Pro Thr Gly Tyr Arg Val Lys Leu Val Phe Gln Gln Phe Asp Leu  
                   35                                  40                                  45  
 Glu Pro Ser Glu Gly Cys Phe Tyr Asp Tyr Val Lys Ile Ser Ala Asp  
                   50                                  55                                  60  
 Lys Lys Ser Leu Gly Arg Phe Cys Gly Gln Leu Gly Ser Pro Leu Gly  
 65                                  70                                  75                                  80  
 Asn Pro Pro Gly Lys Lys Glu Phe Met Ser Gln Gly Asn Lys Met Leu  
                   85                                  90                                  95  
 Leu Thr Phe His Thr Asp Phe Ser Asn Glu Glu Asn Gly Thr Ile Met  
                   100                                  105                                  110  
 Phe Tyr Lys Gly Phe Leu Ala Tyr Tyr Gln Ala Val Asp Leu Asp Glu  
                   115                                  120                                  125



Cys	Ala	Ser	Arg	Ser	Lys	Ser	Gly	Glu	Glu	Asp	Pro	Gln	Pro	Gln	Cys
130						135					140				
Gln	His	Leu	Cys	His	Asn	Tyr	Val	Gly	Gly	Tyr	Phe	Cys	Ser	Cys	Arg
145					150					155					160
Pro	Gly	Tyr	Glu	Leu	Gln	Glu	Asp	Arg	His	Ser	Cys	Gln	Ala	Glu	Cys
				165					170					175	
Ser	Ser	Glu	Leu	Tyr	Thr	Glu	Ala	Ser	Gly	Tyr	Ile	Ser	Ser	Leu	Glu
			180						185				190		
Tyr	Pro	Arg	Ser	Tyr	Pro	Pro	Asp	Leu	Arg	Cys	Asn	Tyr	Ser	Ile	Arg
		195					200					205			
Val	Glu	Arg	Gly	Leu	Thr	Leu	His	Leu	Lys	Phe	Leu	Glu	Pro	Phe	Asp
210						215					220				
Ile	Asp	Asp	His	Gln	Gln	Val	His	Cys	Pro	Tyr	Asp	Gln	Leu	Gln	Ile
225				230						235					240
Tyr	Ala	Asn	Gly	Lys	Asn	Ile	Gly	Glu	Phe	Cys	Gly	Lys	Gln	Arg	Pro
				245					250					255	
Pro	Asp	Leu	Asp	Thr	Ser	Ser	Asn	Ala	Val	Asp	Leu	Leu	Phe	Phe	Thr
			260					265					270		
Asp	Glu	Ser	Gly	Asp	Ser	Arg	Gly	Trp	Lys	Leu	Arg	Tyr	Thr	Thr	Glu
		275					280					285			
Ile	Ile	Lys	Cys	Pro	Gln	Pro	Lys	Thr	Leu	Asp	Glu	Phe	Thr	Ile	Ile
290					295						300				
Gln	Asn	Leu	Gln	Pro	Gln	Tyr	Gln	Phe	Arg	Asp	Tyr	Phe	Ile	Ala	Thr
305					310					315					320
Cys	Lys	Gln	Gly	Tyr	Gln	Leu	Ile	Glu	Gly	Asn	Gln	Val	Leu	His	Ser
				325					330					335	
Phe	Thr	Ala	Val	Cys	Gln	Asp	Asp	Gly	Thr	Trp	His	Arg	Ala	Met	Pro
			340					345					350		
Arg	Cys	Lys	Ile	Lys	Asp	Cys	Gly	Gln	Pro	Arg	Asn	Leu	Pro	Asn	Gly
		355					360					365			
Asp	Phe	Arg	Tyr	Thr	Thr	Thr	Met	Gly	Val	Asn	Thr	Tyr	Lys	Ala	Arg
		370				375					380				
Ile	Gln	Tyr	Tyr	Cys	His	Glu	Pro	Tyr	Tyr	Lys	Met	Gln	Thr	Arg	Ala
385					390					395					400
Gly	Ser	Arg	Glu	Ser	Glu	Gln	Gly	Val	Tyr	Thr	Cys	Thr	Ala	Gln	Gly
				405					410					415	
Ile	Trp	Lys	Asn	Glu	Gln	Lys	Gly	Glu	Lys	Ile	Pro	Arg	Cys	Leu	Pro
			420					425					430		
Val	Cys	Gly	Lys	Pro	Val	Asn	Pro	Val	Glu	Gln	Arg	Gln	Arg	Ile	Ile
			435				440					445			
Gly	Gly	Gln	Lys	Ala	Lys	Met	Gly	Asn	Phe	Pro	Trp	Gln	Val	Phe	Thr
						455					460				
Asn	Ile	His	Gly	Arg	Gly	Gly	Gly	Ala	Leu	Leu	Gly	Asp	Arg	Trp	Ile
465					470					475					480
Leu	Thr	Ala	Ala	His	Thr	Leu	Tyr	Pro	Lys	Glu	His	Glu	Ala	Gln	Ser
				485						490				495	
Asn	Ala	Ser	Leu	Asp	Val	Phe	Leu	Gly	His	Thr	Asn	Val	Glu	Glu	Leu
			500					505					510		
Met	Lys	Leu	Gly	Asn	His	Pro	Ile	Arg	Arg	Val	Ser	Val	His	Pro	Asp
			515					520					525		
Tyr	Arg	Gln	Asp	Glu	Ser	Tyr	Asn	Phe	Glu	Gly	Asp	Ile	Ala	Leu	Leu
						535					540				
Glu	Leu	Glu	Asn	Ser	Val	Thr	Leu	Gly	Pro	Asn	Leu	Leu	Pro	Ile	Cys
545					550					555					560
Leu	Pro	Asp	Asn	Asp	Thr	Phe	Tyr	Asp	Leu	Gly	Leu	Met	Gly	Tyr	Val
				565					570					575	
Ser	Gly	Phe	Gly	Val	Met	Glu	Glu	Lys	Ile	Ala	His	Asp	Leu	Arg	Phe

			580					585					590				
Val	Arg	Leu	Pro	Val	Ala	Asn	Pro	Gln	Ala	Cys	Glu	Asn	Trp	Leu	Arg		
		595					600					605					
Gly	Lys	Asn	Arg	Met	Asp	Val	Phe	Ser	Gln	Asn	Met	Phe	Cys	Ala	Gly		
	610					615					620						
His	Pro	Ser	Leu	Lys	Gln	Asp	Ala	Cys	Gln	Gly	Asp	Ser	Gly	Gly	Val		
625					630					635					640		
Phe	Ala	Val	Arg	Asp	Pro	Asn	Thr	Asp	Arg	Trp	Val	Ala	Thr	Gly	Ile		
			645					650					655				
Val	Ser	Trp	Gly	Ile	Gly	Cys	Ser	Arg	Gly	Tyr	Gly	Phe	Tyr	Thr	Lys		
		660					665					670					
Val	Leu	Asn	Tyr	Val	Asp	Trp	Ile	Lys	Lys	Glu	Met	Glu	Glu	Glu	Asp		
	675					680						685					

&lt;210&gt; 8

&lt;211&gt; 673

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

Glu	Pro	Thr	Met	Tyr	Gly	Glu	Ile	Leu	Ser	Pro	Asn	Tyr	Pro	Gln	Ala		
1				5				10						15			
Tyr	Pro	Ser	Glu	Val	Glu	Lys	Ser	Trp	Asp	Ile	Glu	Val	Pro	Glu	Gly		
		20					25					30					
Tyr	Gly	Ile	His	Leu	Tyr	Phe	Thr	His	Leu	Asp	Ile	Glu	Leu	Ser	Glu		
		35					40				45						
Asn	Cys	Ala	Tyr	Asp	Ser	Val	Gln	Ile	Ile	Ser	Gly	Asp	Thr	Glu	Glu		
50					55					60							
Gly	Arg	Leu	Cys	Gly	Gln	Arg	Ser	Ser	Asn	Asn	Pro	His	Ser	Pro	Ile		
65				70					75					80			
Val	Glu	Glu	Phe	Gln	Val	Pro	Tyr	Asn	Lys	Leu	Gln	Val	Ile	Phe	Lys		
			85					90					95				
Ser	Asp	Phe	Ser	Asn	Glu	Glu	Arg	Phe	Thr	Gly	Phe	Ala	Ala	Tyr	Tyr		
		100					105					110					
Val	Ala	Thr	Asp	Ile	Asn	Glu	Cys	Thr	Asp	Phe	Val	Asp	Val	Pro	Cys		
		115				120						125					
Ser	His	Phe	Cys	Asn	Asn	Phe	Ile	Gly	Gly	Tyr	Phe	Cys	Ser	Cys	Pro		
130					135						140						
Pro	Glu	Tyr	Phe	Leu	His	Asp	Asp	Met	Lys	Asn	Cys	Gly	Val	Asn	Cys		
145				150					155					160			
Ser	Gly	Asp	Val	Phe	Thr	Ala	Leu	Ile	Gly	Glu	Ile	Ala	Ser	Pro	Asn		
			165				170						175				
Tyr	Pro	Lys	Pro	Tyr	Pro	Glu	Asn	Ser	Arg	Cys	Glu	Tyr	Gln	Ile	Arg		
		180					185						190				
Leu	Glu	Lys	Gly	Phe	Gln	Val	Val	Val	Thr	Leu	Arg	Arg	Glu	Asp	Phe		
	195					200						205					
Asp	Val	Glu	Ala	Ala	Asp	Ser	Ala	Gly	Asn	Cys	Leu	Asp	Ser	Leu	Val		
210					215						220						
Phe	Val	Ala	Gly	Asp	Arg	Gln	Phe	Gly	Pro	Tyr	Cys	Gly	His	Gly	Phe		
225				230						235				240			
Pro	Gly	Pro	Leu	Asn	Ile	Glu	Thr	Lys	Ser	Asn	Ala	Leu	Asp	Ile	Ile		
			245					250					255				
Phe	Gln	Thr	Asp	Leu	Thr	Gly	Gln	Lys	Lys	Gly	Trp	Lys	Leu	Arg	Tyr		
		260					265						270				
His	Gly	Asp	Pro	Met	Pro	Cys	Pro	Lys	Glu	Asp	Thr	Pro	Asn	Ser	Val		
	275					280						285					
Trp	Glu	Pro	Ala	Lys	Ala	Lys	Tyr	Val	Phe	Arg	Asp	Val	Val	Gln	Ile		

290		295		300
Thr Cys Leu Asp Gly Phe Glu Val Val Glu Gly Arg Val Gly Ala Thr				
305		310		315
Ser Phe Tyr Ser Thr Cys Gln Ser Asn Gly Lys Trp Ser Asn Ser Lys				
	325		330	335
Leu Lys Cys Gln Pro Val Asp Cys Gly Ile Pro Glu Ser Ile Glu Asn				
	340		345	350
Gly Lys Val Glu Asp Pro Glu Ser Thr Leu Phe Gly Ser Val Ile Arg				
	355		360	365
Tyr Thr Cys Glu Glu Pro Tyr Tyr Tyr Met Glu Asn Gly Gly Gly Gly				
	370		375	380
Glu Tyr His Cys Ala Gly Asn Gly Ser Trp Val Asn Glu Val Leu Gly				
385		390		395
Pro Glu Leu Pro Lys Cys Val Pro Val Cys Gly Val Pro Arg Glu Pro				
	405		410	415
Phe Glu Glu Lys Gln Arg Ile Ile Gly Gly Ser Asp Ala Asp Ile Lys				
	420		425	430
Asn Phe Pro Trp Gln Val Phe Phe Asp Asn Pro Trp Ala Gly Gly Ala				
	435		440	445
Leu Ile Asn Glu Tyr Trp Val Leu Thr Ala Ala His Val Val Glu Gly				
	450		455	460
Asn Arg Glu Pro Thr Met Tyr Val Gly Ser Thr Ser Val Gln Thr Ser				
465		470		475
Arg Leu Ala Lys Ser Lys Met Leu Thr Pro Glu His Val Phe Ile His				
	485		490	495
Pro Gly Trp Lys Leu Leu Glu Val Pro Glu Gly Arg Thr Asn Phe Asp				
	500		505	510
Asn Asp Ile Ala Leu Val Arg Leu Lys Asp Pro Val Lys Met Gly Pro				
	515		520	525
Thr Val Ser Pro Ile Cys Leu Pro Gly Thr Ser Ser Asp Tyr Asn Leu				
	530		535	540
Met Asp Gly Asp Leu Gly Leu Ile Ser Gly Trp Gly Arg Thr Glu Lys				
545		550		555
Arg Asp Arg Ala Val Arg Leu Lys Ala Ala Arg Leu Pro Val Ala Pro				
	565		570	575
Leu Arg Lys Cys Lys Glu Val Lys Val Glu Lys Pro Thr Ala Asp Ala				
	580		585	590
Glu Ala Tyr Val Phe Thr Pro Asn Met Ile Cys Ala Gly Gly Glu Lys				
	595		600	605
Gly Met Asp Ser Cys Lys Gly Asp Ser Gly Gly Ala Phe Ala Val Gln				
	610		615	620
Asp Pro Asn Asp Lys Thr Lys Phe Tyr Ala Ala Gly Leu Val Ser Trp				
625		630		635
Gly Pro Gln Cys Gly Thr Tyr Gly Leu Tyr Thr Arg Val Lys Asn Tyr				
	645		650	655
Val Asp Trp Ile Met Lys Thr Met Gln Glu Asn Ser Thr Pro Arg Glu				
	660		665	670
Asp				